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PATENT
5500-48700/TT3313

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No.: 09/366,441
Filed: August 3, 1999
Inventors:
Campbell, et al.

Title: System and Method for Monitoring and/or Controlling Attributes of Multiple Chemical Mixtures with a Single Sensor

Examiner: Siefke, Samuel P.
Group/Art Unit: 1743
Atty. Dkt. No: 5500-48700

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Robert C. Kowert
Printed Name

Signature

April 21, 2005
Date

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

In response to the Examiner's Answer mailed February 22, 2005, Appellants present this Reply Brief. Appellants respectfully request that this Reply Brief be entered pursuant to 37 C.F.R. § 41.41 and considered by the Board of Patent Appeals and Interferences.

REPLY TO EXAMINER'S ANSWER

Related Appeals and Interferences:

The Examiner states (Examiner's Answer, item 2) that Appellants' Appeal Brief does not contain a statement identifying the related appeals and interferences which directly effect or will be directly affected by or have a bearing on the decision in the pending appeal. Appellants, however, point to section II, page 2, of Appellants' Appeal Brief, filed September 16, 2004, which specifically states, "[n]o other appeals or interferences are known which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal."

Status of Claims:

Appellants acknowledge the change in status of claims 7-15. The Examiner has withdrawn the rejections of these claims and states (Examiner's Answer, item 10) that claims 7-15 are objected to, but would be allowable if rewritten in independent form.

Grouping of Claims:

The Examiner incorrectly states (Examiner's Answer, item 7) that claims 1-6 stand or fall together, "because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof," citing 37 CFR 1.192(c)(7). However, effective September 13, 2004, 37 CFR § 1.192 was deleted. Appellants note that there is no longer any requirement to include a specific statement regarding the grouping of claims. As per 37 CFR § 41.37(c)(1)(vii), "[a]ny claim argued separately should be placed under a subheading identifying the claims by number." Appellants Appeal Brief, filed September 16, 2004, (section VII, Argument) argues claim 6 under a separate subheading under both the first and second grounds of rejection. Thus, the Examiner's statement that claims 1-6 stand or fall together is incorrect. Additional arguments in regard to claim 2 are presented herein in response to the Examiner's Answer under the second ground of rejection.

First Ground of Rejection:

Claims 1-5:

In the Appeal Brief, Appellants argue that Tawarayama does not teach a sensor configured to selectively receive a first sample flow of a first chemical mixture from a first chemical vessel and to selectively receive a second sample flow of a second chemical mixture from a second chemical vessel, as recited in claim 1. In response, the Examiner relies on sample 202 being a first sample and that a second sample is created in the second sample introduction unit (Examiner's Answer, item 11, paragraph 1). The Examiner further states that the "Examiner recognizes there is only a single sample source ... but **two sample flows** and **two separate samples** (first chemical mixing vessel (sample loop 204), second chemical mixing vessel (second sample loop 412)) are created by one sample source" (emphasis by Examiner). Appellants note, however, that although Tawarayama's system creates multiple sequential samples from a single sample vessel 202, the detection unit 7 in Tawarayama is not configured to selectively receive separate chemical mixture sample flows from separate chemical vessels.

Tawarayama teaches that a sample 202 is mixed with a decomposing reagent 203 in tube 103 by the first sample introduction unit 2 (col. 4, lines 45-59). The sample mixture is then heated and decomposed by thermostat 303 in pre-treatment unit 3 (col. 4, line 60 – col. 5, line 21). The sample mixture is then injected by the second sample introduction unit 4 into coloring unit 6 where it is mixed with coloring reagent 602 (col. 5, lines 22-52). The resultant sample mixture is then measured by detection unit 7 (col. 5, lines 53-67). Thus, Tawarayama teaches how a sample from a single source 202 is prepared for testing (by being mixed with a decomposing reagent, heated, and mixed with a coloring reagent) and then tested by a detection unit. The detection unit in Tawarayama only receives samples processed from this single source. In Tawarayama, all sample flows are received by detection unit 7 from the second sample loop 4 via coloring unit 6. As the Examiner himself notes, in Tawarayama the sample flow at the second sample loop is created out of the sample flow from the first sample loop. Since the sample flow

from the first sample loop turns into the sample flow from the second sample loop before it ever reaches the detection unit 7, detection unit 7 cannot selectively receive sample flows from both the first sample loop and the second sample loop. Tawarayama's system does not select between different vessels from which detection unit 7 receives a sample flow.

On p. 6 of his Answer, the Examiner equates sample loop 204 to the first chemical vessel of claim 1, and the Examiner equates second sample loop 412 to the second chemical vessel of claim 1. However, contrary to the Examiner's position, Tawarayama's system does not select between sample loop 204 and sample loop 412 for receiving a sample flow at detection unit 7. Instead, all sample flows pass through both sample loops in Tawarayama's system. Thus, Tawarayama's system does not select between different vessels from which detection unit 7 receives a sample flow.

The Examiner further states, "[r]egarding the selectively receiving limitation, Tawarayama discloses that the sample can be either introduced into the detection unit or to a discharge (waste), this is selectively receiving a sample." However, Tawarayama's ability to direct a sample flow to either a discharge (waste) path or to a detection unit does not anticipate a sensor configured to selectively receive a first sample flow from a first chemical vessel and to selectively receive a second sample flow from a second chemical vessel. Instead, Tawarayama's system includes only the ability to direct a sample flow either to a detection unit or to a discharge outlet. Detection unit 7, which the Examiner equates to the sensor of Appellants' claim 1, receives all samples via coloring unit 6. The ability to switch the sample flow to the discharge outlet is completely irrelevant to whether or not the detection unit 7 is configured to selectively receive separate chemical mixture sample flows from separate chemical vessels. Clearly, the detection unit 7 in Tawarayama is not configured to selectively receive separate chemical mixture sample flows from separate chemical vessels.

Claim 6:

Appellants note that the Examiner failed to provide any rebuttal in the Examiner's Answer in regard to Appellants' arguments in the Appeal Brief in regard to claim 6.

Second Ground of Rejection:

Claims 1, 3-5:

Appellants have argued that EP 544 does not teach a sensor configured to selectively receive a first sample flow of a first chemical mixture from a first chemical vessel and to selectively receive a second sample flow of a second chemical mixture from a second chemical vessel, as recited in claim 1. The Examiner responds (Examiner's Answer, item 11, paragraph 3) that he is "relying upon the metering flow of the sample [in EP 544] for the sensor limitation." However, as noted in Appellants' Appeal Brief, the metering performed by the sampling valve of EP 544 does not teach a sensor configured to measure a first sample attribute of a first sample flow and a second sample attribute of a second sample flow. The terms "metering" and "measuring quantity" are used in EP 544 to mean obtaining a specific amount of fluid, not as a sensor configured to measure attributes of chemical mixtures. The device in EP 544 does not sense any attribute of a chemical mixture. Instead, it simply transfers a fixed amount of fluid from one passage to another. Referring to Fig. 1 of EP 544, the metering in EP 544 means nothing more than flowing a sample in direction A from pipette 16 to fill up passage P1. The movable element 12 is then moved up to transfer the "metered" sample to the other passage. This sampling valve action has nothing to do with a sensor configured to measure attributes of chemical mixtures.

Obtaining a fixed quantity (see, EP 544, page 2, lines 17-20) of a sample is not the same as measuring a *sample attribute of a sample flow*, as required by claim 1. The quantity of a sample obtained by the sampling valve of EP 544 has nothing to with any particular attribute of the sample. Instead, the quantities obtained are a *fixed aspect* of the

sampling valve of EP 544. Thus, the sampling valve of EP 544 cannot be interpreted as measuring a sample attribute of a sample flow, as the Examiner argues.

Moreover, the sampling valve of EP 544 receives samples only from pipette 16. Thus, the sampling valve of EP 544 clearly cannot be considered to selectively receive a first sample flow of a first chemical mixture from a first chemical vessel and to selectively receive a second sample flow of a second chemical mixture from a second chemical vessel, as is recited in Appellants' claim 1.

Additionally, the sampling valve of EP 544 is not configured to measure sample attributes of two respective sample flows. In his rejection, the Examiner refers to dispensing means C1 to C5 as fluid holding vessels. However, EP 544 fails to disclose anything regarding measuring an attribute of a flow of the dilution liquid from C1 to C5. Instead, EP 544 states that the dilution liquid is used to discharge the samples (*see, e.g.* EP 544, page 2, lines 30-32 and page 3, lines 15-16). Nowhere does EP 544 mention anything regarding measuring the flow, or any other attribute, of the dilution liquid. Thus, EP 544 fails to disclose any sensor configured to measure a first sample attribute of a first sample flow and a second sample attribute of a second sample flow, as recited in claim 1. Also, pipette 16, not dispensing means C1 to C5, is the sample source for the metering apparatus of EP 544. The metering function of EP 544 operates only on a sample from pipette 16, and not on the fluid from C1 to C5. Thus, the apparatus of EP 544 clearly cannot be considered to selectively receive a first sample flow of a first chemical mixture <u>from a first chemical vessel</u> and to selectively receive a second sample flow of a second chemical mixture <u>from a second chemical vessel</u>.

<u>Claim 2</u>:

Claim 2 recites, in part, "wherein the sensor is a concentration sensor configured to measure concentration." In his Answer, the Examiner states that he is relying on the metering function of EP 544 to teach the sensor. The sampling valve of EP 544 cannot possibly be interpreted as a concentration sensor configured to measure concentration of

a chemical within a sample flow. Appellants also note that the Examiner has never addressed the specific limitations of claim 2. The Examiner has never provided any explanation of how he believes EP 544 to teach a concentration sensor.

CONCLUSION

For the foregoing reasons submitted in the Appeal Brief and this Reply Brief, it is submitted that the Examiner's rejections of claims 1 – 6 were erroneous. Reversal of the Examiner's decision is respectfully requested.

Respectfully submitted,

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